



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

drawing, which next receives the sky and finishing with the brushes, &c., as first described.

C. GALPIN.

P. S. This statement contains several trifling improvements since my communication to the Society, particularly the use of three brushes.

The Society will please to retain any of the specimens in their possession which they may think proper.

No. II.

ELASTIC MOULDS FOR CASTING IN.

The LARGE SILVER MEDAL was this session presented to Mr. DOUGLAS FOX, of Derby, surgeon, for his Elastic Moulds for Casts in Wax or Plaster of Paris. The following communication has been received from the Candidate on the subject, and specimens of his casting have been placed in the Society's collection.

SIR,

Derby, April 5, 1826.

If you would have the kindness to transmit the inclosed paper, together with the specimen, cast in plaster of paris, to the Society for the encouragement of Arts, Manufactures, and Commerce, you will much oblige,

A. Aikin, Esq.

Sir, your's, &c.

Secretary, &c. &c.

DOUGLAS FOX.

Description of making Elastic Moulds of Glue.

Having been much employed in taking casts of anatomical preparations, I frequently met with specimens, principally of hard substances, that did not admit of moulds hitherto employed being removed from them. This arose from any given specimen of such description having various portions of it with considerable overlaps; that is, there were hollows, or undercut parts, from which no mould could be withdrawn without its being injured.

Although in many instances soft clay, or soft wax, may be used to take impressions, still these, in numberless instances, cannot be removed from the body to be moulded without being injured in those parts which were pressed into the hollows; to overcome these difficulties, it appeared evident that if an *elastic* substance could be substituted for the soft clay, or wax, the moulds might be withdrawn uninjured, by giving way during the removal from the undercut parts of any such body, and also that the moulds would afterwards return to their proper forms again. To effect this I have made use of glue, which has answered perfectly, employed as follows:—

The body to be moulded, previously oiled, must be secured one inch above the surface of a board, and then surrounded by a wall of clay, about an inch distant from its sides, the clay must also extend rather higher than the contained body; into this, warm melted glue, as thick as possible, so that it will run, is to be poured, so as to completely cover the body to be moulded; the glue is to remain till cold, when it will have set into an *elastic* mass, just such as is required.

Having removed the clay, the glue is to be cut into as many pieces as may be necessary for its removal, either by a sharp pointed knife, or by having placed threads in the requisite situations on the body to be moulded, which may be drawn away when the glue is set, so as to cut it in any way that may be desired; the use of these threads need not be more fully explained, as the method is generally known to persons in the habit of casting.

The portions of the glue mould, having been removed from the original, are to be placed together, and bound round by tape.

In some instances it is well to run small wood pegs through the portions of glue, so as to keep them exactly in their proper positions. If the mould is of considerable size it is better to let it be bound with moderate tightness upon a board, to prevent it bending whilst in use; having done as above described, the plaster of paris, as in common casting, is to be poured into the mould and left to set.

In many instances wax may also be cast into glue, if it is not poured in whilst too hot, as the wax cools so rapidly when applied to the cold glue that the sharpness of the impression is not injured.

I have stated glue as succeeding well where an *elastic* mould is alone applicable; but many modifications are admissible. Where the moulds are not used soon after being made, treacle should be previously mixed with the glue (as employed by printers), to prevent it becoming hard.

The description thus given is with reference to moulding those bodies which cannot be so done by any other than an *elastic* mould; but glue moulds will be found greatly to facilitate casting in many departments, as a mould may

frequently be taken by this method in two or three pieces, which would on any other principle require many.

DOUGLAS FOX.

The specimens accompanying Mr. Fox's communication were casts of a deer's horn, and of a calculous concretion, very rough and tubercular on the surface. The Committee considered it desirable to have before them also a specimen of a cast from some soft anatomical preparation, and accordingly directed the Secretary to make known their wish to the candidate. This was done, and produced the following additional communication, accompanied by a cast from a fœtus, as described in Mr. Fox's letter.

Derby, May 13, 1826.

In compliance with the request of the Committee, I have, by means of a glue mould as before described, made a cast of a deformed fœtus, which has been preserved many years in spirits; the skin has become extremely wrinkled, flaccid, and tender, so that no substance but such as was yielding could have been applied, and again removed, without injuring the original. By making the mould of an *elastic*, or yielding material, this point has been completely obtained.

Even supposing the fœtus could have been moulded as usual, either by plaster of paris in many parts, or by pressing clay, or soft wax, upon it, the operation was performed with one-tenth of the trouble by the glue mould; but the original would not allow of a hard unyielding substance, like plaster of paris, being removed, without injur-

ing it; nor would it bear the pressure of clay, or soft wax, sufficiently to take an impression. I therefore am well convinced, no plan but an *elastic* mould could have been employed to procure a cast of the fœtus without injuring it, as it is in so tender a state.

But it is not in making casts from soft substances that I consider the *principal* advantage of moulding in glue consists, although in this department it is highly advantageous, and will take some preparations of this kind, which cannot be done by any other means. The great difficulty in casting is to be able, where it is required, to make a mould which will deliver where there are undercut parts, or hollows, or where there is what is called a dove-tail; now this can only be effected by means of an *elastic* mould, and I have found nothing better for that purpose than glue, as before described. I am well aware that soft wax has been long employed to form moulds upon hard bodies; but where there are several undercut, or hollow parts, or parts that project in the subject to be moulded, the wax not being *elastic* cannot return accurately to its proper position when removed from the body. More fully to explain this, I have made a cast of a calculus, which could not possibly have been produced by any other mode than that of having an *elastic* mould; soft wax could not have been removed from the undercut parts without having its form injured; now the glue gives way whilst being removed, and returns to its former position, or shape, when so removed, which enables the parts to be accurately represented.

I therefore consider the principal advantage of my plan to consist in the moulds being *elastic*, and consequently capable of removal from hollows, and undercut parts, by giving way, and again returning to their proper forms.

This great desideratum in casting cannot, in numberless instances, be obtained by any other means. The glue moulds are also, in common instances, much more expeditiously employed than others.

The fœtus having been oiled, was surrounded by two silk threads previous to the glue being poured upon it, so that when the threads were drawn out they cut the mould into three pieces; the situations of these divisions are seen by the seams left upon the preparation. This being done, the elasticity of the glue allowed every part to be removed without the slightest injury. There is no novelty in using thread, as here described.

The mould of the calculus was merely cut into two parts, which allowed each half to be removed from the stone; they being again placed together, were ready for use, that is, for the plaster to be poured in.